

Fuels Workshop on Regulatory and Non-Regulatory Fuels Activities for 2006

July 10, 2006

California Environmental Protection Agency



Air Resources Board

Agenda

- ➡ Introductions and Schedule
- ➡ Suggested Biodiesel Policy
- ➡ California Predictive Model
 - Tech 5 Model
 - Emissions Inventory
- ➡ Presentations by Others
- ➡ Open Discussions
- ➡ Closing Remarks

Future 2006 Workshops

- ➡ July 24 1:30-5:00 Byron Sher Auditorium
- ➡ Aug. 11 9:00-12:30 Byron Sher Auditorium
- ➡ Aug. 25 9:00-12:30 Byron Sher Auditorium
 - These workshops will be webcast; conference call phone number and pass code will be the same as today.

Discussion Topic: Suggested Biodiesel Policy

Discussion Topic: Predictive Model

Predictive Model

- ➡ Committed to the Board to review need for update about every 5 years – last updated 1999
- ➡ Issues
 - Permeation
 - Carbon Monoxide
 - New Data
 - Reactivity
 - Emissions Inventory Model – EMFAC
- ➡ Currently slated to go to the Board in October of 2006

Predictive Model - Hydrocarbons

☞ Four Parts

- Exhaust HC% * IWF * RF +
- Evap HC% * IWF * RF +
- CO% * IWF * RF +
- Permeation% * IWF * RF

☞ Evap HC - Hot Soak, Diurnal, Resting Loss, and Running Loss

Predictive Model – Weighting Factors

- ➡ Staff is proposing to change how the emission categories are weighted.
- ➡ Currently, each hydrocarbon emissions category is weighted based on Tech 3, 4, and 5 contributions.
- ➡ Each hydrocarbon emissions category will be weighted based on the entire fleet.
- ➡ Necessary to ensure that Permeation emissions are offset.

Statistics Subgroup

- ➡ Group was asked to investigate the merits of building a standalone Tech 5 model
 - Staff proposes that a Tech 5-Adjustment will be used consistent with development in 1999.
- ➡ Group proposes that Auto/Oil #17 advanced technology vehicles be moved back to Tech 4
- ➡ Averaging repeats question been posed to David Rocke
 - 3 for averaging, 1 against, 1 neutral
- ➡ Use forward stepwise with significant Fixed Effect and backwards with Information Criteria
- ➡ Remove unsupported terms

Reactivity

2003 Update to MIR Values

- ➡ 23 existing VOCs for which new MIR values differed by 5% or greater
- ➡ 102 new VOCs added to the list
- ➡ Researching old species profiles
- ➡ While average reactivity is changing, the relative difference is still close

Draft Updates to Specific Reactivity Values (ARB EtOH study)

	1998 Specific Reactivity MIR	Updated Specific Reactivity	Difference
HOT SOAK	2.40	3.03	26.3 %
DIURNAL	1.58	2.07	31.3 %
EXHAUST	3.35	4.03	20.4 %

Emissions Inventory

Tech Group Weighting Factors

Statewide, LDV (GVW < 5750 lbs.)

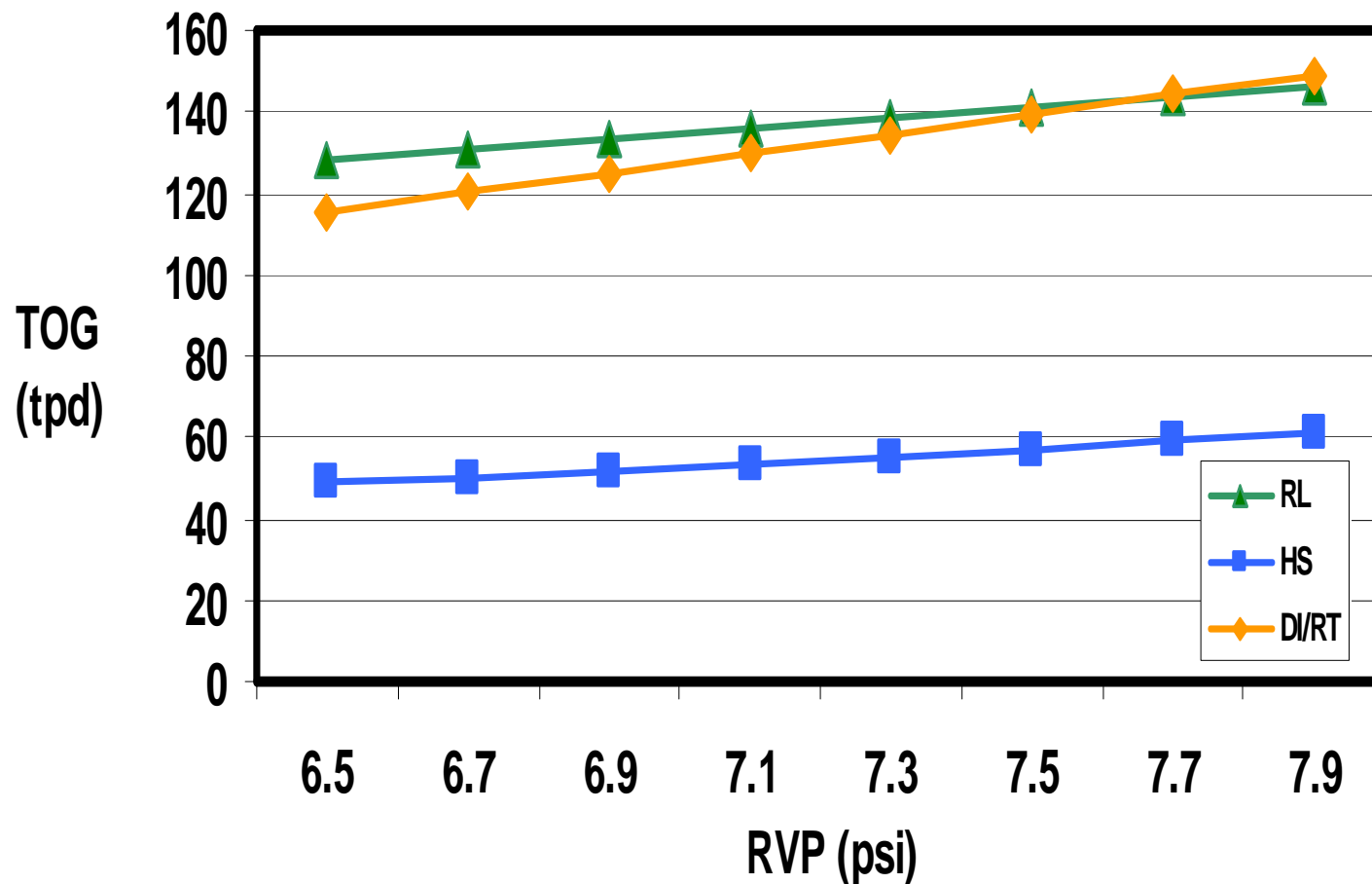
Exh Pollutant**	New Model (CY 2010)*			Current Model (CY 2005)		
	Tech 3 ('81-'85)	Tech 4 ('86-'95)	Tech 5 ('96-'10)	Tech 3 ('81-'85)	Tech 4 ('86-'95)	Tech 5 ('96-'05)
TOG/THC	0.109	0.536	0.356	0.166	0.540	0.294
NOx	0.091	0.466	0.443	0.122	0.348	0.530
Toxics	0.019	0.145	0.836	0.021	0.180	0.799

*EMFAC2007 Working Draft, CA 8-Hr O3 Temp. Profile and Rel. Humidity

**Based on emissions, except Toxics (VMT)

TOG Evaporative Emissions By RVP

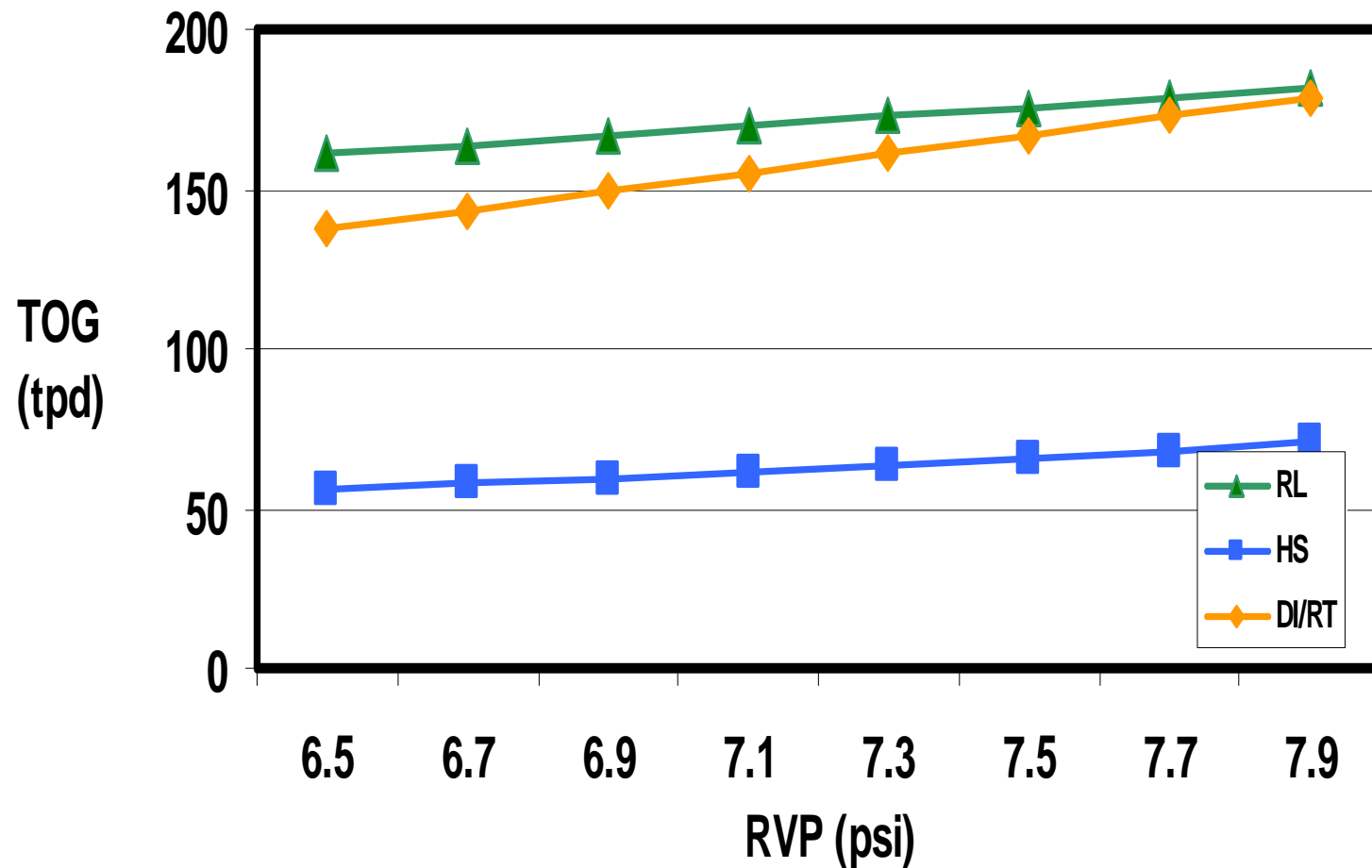
2010 Statewide, LDV (GVW < 5750 lbs.), Tech 3-5



EMFAC2007 Working Draft, CA 8-Hr O3 Temp. Profile and Rel. Humidity

TOG Evaporative Emissions By RVP

2010 Statewide, LDV (GVW < 5750 lbs.), Tech 1-5



EMFAC2007 Working Draft, CA 8-Hr O3 Temp. Profile and Rel. Humidity

Exhaust & Evap Weighting Factors

2010 Statewide, LDV (GVW < 5750 lbs.)

Pollutant	Emission Fractions	
	Tech 3-5	Tech 1-5
Exh TOG	0.046	0.050
Evap TOG		
DI/RT	0.025	0.024
HS	0.014	0.013
RL	0.034	0.034
EtOH Perm Incr.	0.005	0.005
CO	0.876	0.875

*EMFAC2007 Working Draft, CA 8-Hr O3 Temp. Profile and Rel. Humidity

2010 Statewide, Ozone Forming Potential

All Gasoline Vehicles

CY	On-Road			Offroad	
	TOG		CO	TOG	
	Exh	Evap	Perm Incr.	Exh	Perm Incr.
Emissions (tpd)	388	365	28	5942	34
MIR	3.35	2.21	3.47	0.07	3.47
Ozone (tpd)	1301	806	99	416	118
Ozone (% of Tot)	47.5	29.4	3.6	15.2	4.3

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Statewide, Ozone Forming Potential

All Gasoline Vehicles (tpd)

CY	On-Road			Offroad	
	TOG			TOG	
	Exh	Evap	Perm Incr.	Exh	Perm Incr.
2010	1301	806	99	416	118
2015	729	679	67	288	109
2020	495	583	48	204	110

Emissions Inventory Update

- ➡ Documentation available through Reformulated Gasoline webpage at:
<http://www.arb.ca.gov/fuels/gasoline/meeting/2006/mtg2006.htm>

Permeation - What's Next

- ➡ The CRC is proceeding with a second stage of the E-65 test program
- ➡ Two additional vehicles: LEV II and PZEV
- ➡ Additional fuels: 10% and 20% ethanol and a higher aromatics fuel
- ➡ E85 and a Flexible Fueled Vehicle
- ➡ Interim Final Report available soon
- ➡ Interim report will not present E20 information

Presentations by Others

Open Discussions

Closing Remarks